

Appendix C: Possible Adaptations for Students with Learning Difficulties in Mathematics

The following are suggested adaptations that teachers can utilize when planning instruction for students with learning difficulties in mathematics. For additional information on meeting the instructional needs of all students, see the Universal Access chapter. However the Individualized Education Program (IEP), for students with disabilities who are receiving special education services, will provide specific guidance for supplementary aids and services including accommodations, modifications, and assistive technology that are individualized to address the needs of that particular student, as determined by the IEP team.

Possible adaptations for students with visual and auditory difficulties:

- The student is located close to where the teacher is providing instruction, in addition to being able to receive peer assistance.
- The student's desk is free of distractions.
- Visual cues are provided on the wall.
- The teacher previews the content and makes key concepts explicit to students with review and frequent checks for understanding.
- Students are provided with study guides.
- The teacher uses consistent routines.
- When presenting material, the teacher utilizes a moderate tone of voice, clearly enunciates words, and often repeats the lesson's key ideas.

- The teacher decreases visual complexity by presenting one key idea or problem at a time on the overhead or projector screen. Similarly, templates are used to block out all of the problems on a worksheet page except for the one that the student is completing.
- Respect for student and teacher ideas is maintained by only one person talking at a time so that students can remain focused.
- The teacher uses methods of organizing written assignments such as computations completed on centimeter grid paper. Templates are drawn for traditional algorithms.
- Concrete models are utilized instead of pictures.
- Student is provided with audio and/or video lessons.
- Student is provided access to text as per student's preference (e.g. peer assistance, specialized software and computer access, audio recording) to assist with reading assignments and problems.
- Reading tasks are shortened.
- Frequent connections are made between what is happening in class with real-life situations outside of class.

Possible adaptations for students with memory difficulties:

- The teacher provides only one instruction at a time.
- After giving instructions, the teacher asks students to repeat the instructions in their own words. The teacher also writes the instructions on the board.
- The teacher provides frequent reviews (distributed practice).

- Students are able to use calculators.
- Additional time is provided for students to complete assignments and assessments.
- Assignments and calendar of due dates are electronically available (e.g., on the teacher's website).

Possible adaptations for students with integrative difficulties such as abstract thinking and conceptualization:

- Teachers utilize concrete models and multi-media for an extended period of time.
- Students verbalize what they are doing through words, pictures, and numbers.
- Students are encouraged to justify their thinking.
- New conceptual ideas are repeated and practiced.
- Students are encouraged to restate word problems in their own words.
- Students are provided opportunities to teach the concept to each other.
- An abstract concept is represented in a variety of ways, such as concrete examples, words, symbols, drawings, and acting it out.
- Students are placed in heterogeneous groups for peer assistance and modeling (Vaughn, Bos, and Schumm 2011, 168; Hoover 2008; Van de Walle, 2007).
- Teacher scaffolds open-ended inquiries.

Possible adaptations for students with Attention Deficit Hyperactivity Disorder (ADHD):

- 69 • Novelty in instruction and directions are supported by students highlighting
70 important instructions and key points. For example, students may highlight the
71 operations signs on a math page.
- 72 • Classroom schedules and routines are well established and maintained.
- 73 • Students are prepared ahead of time for transitions and are provided support in
74 completing transitions.
- 75 • Time limits for assignment completion are emphasized.
- 76 • Positive feedback about students' performance and behavior are provided
77 consistently and often.
- 78 • Teacher instructions are brief and clear.
- 79 • Assignments and classwork allow for movement and postures other than sitting.
- 80 • The classroom environment is arranged to facilitate attention and to minimize
81 distractions.
- 82 • Active participation is promoted by developing critical thinking through effective
83 questioning.
- 84 • Students can opt to complete a lesser number of problems on a worksheet or a
85 test that do not lower the expectations or standards.
- 86 • Multiple forms of assessment are utilized to determine student learning (Vaughn,
87 Bos, and Schumm 2011, 168; Hoover 2008; Van de Walle, 2007).